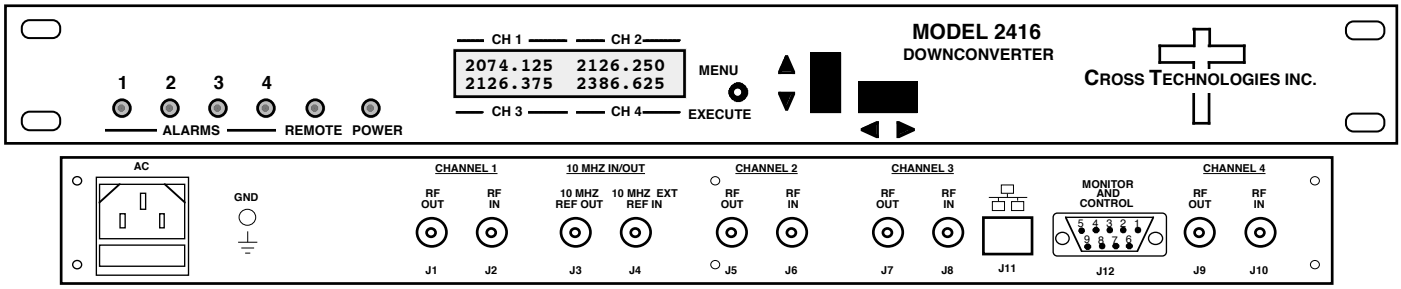
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV. C 1/15/25

2416-425 Downconverter, 2.0 - 2.5 GHz to 70 MHz, Four Channel

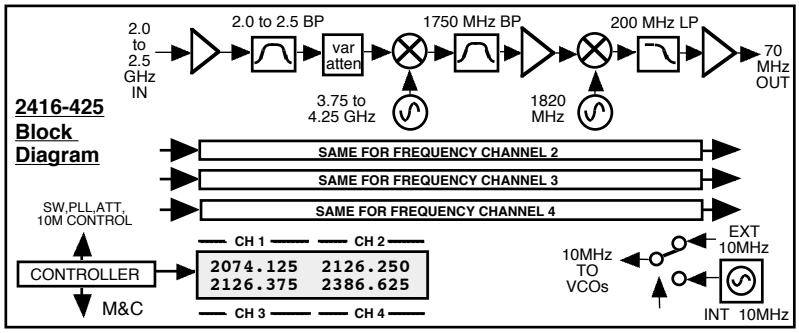
2416-325 Three Channel • 2416-225 Two Channel • 2416-125 One Channel

The 2416-425 Downconverter has four individual channels, each one converts 2.0 to 2.5 GHz to 70 MHz in **125 kHz steps using PLL in "exact frequency mode"** with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Front panel switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power, PLL alarm or Remote operation. Gain is adjustable manually over a 0 to +30 dB range. The frequency and gain of each channel are also remotely selectable. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female for the RF IN, RF OUT and **external 10 MHz reference input and output**. **The table below shows available options.** It is powered by a 100-240 ±10% VAC, 47-63 Hz power supply, and is in a 1 3/4" X 19" X 16" rack mount chassis.



Front and Rear Panels (2416-425 Four Channel shown with optional Ethernet)

EQUIPMENT SPECIFICATIONS*



Input Characteristics

Impedance/Return Loss	50Ω/10 dB
Frequency	2.0 to 2.5 GHz
Noise Figure, Max.	15 dB max gain
Input Level range	**-50 to -20 dBm**

Output Characteristics

Impedance/Return Loss	75 Ω /18 dB
Frequency	70 ± 18 MHZ
Output Level range	**-20 to -10 dBm**
Output 1 dB compression	**0 dBm**

Channel Characteristics

Gain range (adjustable)	**0.0 to +30.0 dB, 1±1 dB steps**
Image Rejection	> 50 dB, min.
Frequency Response	±1.5 dB, 2.0 to 2.5 GHz ; ± 0.5 dB, 36 MHz BW; **±1.0 dB, 40 MHz BW**
Spurious Response	< -50 dBc, in band
Ch to Ch isolation	< **-60 dB typ., < -50 dB min. ;G=30, -30 dBm input level**
Group Delay, max	0.015 ns/MHz2 parabolic; 0.05 ns/MHz linear; 1 ns ripple
Frequency Sense	Inverting or Non-inverting, selectable

Synthesizer Characteristics

Frequency Accuracy	± 1.0 ppm max over temp (± 0.01 ppm, option H)
Frequency Step	**125 kHz** (as low as 1 kHz steps available)

Phase Noise @ Freq (Hz)	*10*	*100*	*1k*	*10k*	*100k*	*1M*
Specification dBC/Hz	*-60*	*-65*	*-75*	*-80*	*-90*	*-110*
Typical dBC/Hz	***-67***	***-69***	***-77***	***-83***	***-97***	***-117***

10 MHz Level (In or Out) 3 dBm, ± 3 dB, 75 ohms

Controls, Indicators

Frequency/Gain Selection	direct readout LCD; manual or remote selection
Power; Alarm; Remote	Green LED; Red LED; Yellow LED
Remote	**RS232C/RS485 selectable, (Ethernet optional)**

Other

RF IN Connector	50Ω BNC (female)
RF OUT, 10 MHz Con.	75Ω BNC (female), **75Ω BNC (female) works with 50Ω**
Alarm/Remote Connector	DB9 (female) - NO or NC contact closure on Alarm
Size	19 inch, 1RU standard chassis 1.75" high X 16.0" deep
Power	100-240 ± 10% VAC, 47-63 Hz, 45 watts max

Available Options

H - High Stability (±0.01ppm) Internal Ref
R- Redundant Power Supply
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet
W828 - W8 + W18 + W28
W140-x- 140±36 MHz
W140/70-x- 140±36/70±18 MHz Selectable
X1002-x - 1 kHz Freq Step Size

Connectors/Impedance

STD - 50Ω BNC (RF IN), 75Ω BNC (RF OUT)
Bx - 75Ω BNC (RF IN), 75Ω BNC (RF OUT)
Dx - 50Ω BNC (RF IN), 50Ω BNC (RF OUT)
Kx - 75Ω BNC (RF IN), 50Ω BNC (RF OUT)
x = # of Channels

Contact Cross for other options

* 10˚C to 40˚C; Specifications subject to change without notice

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